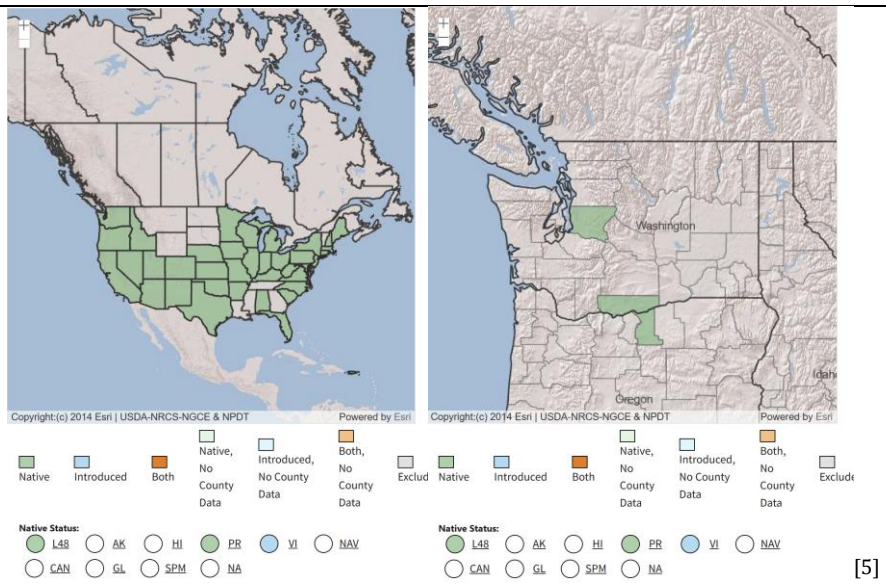
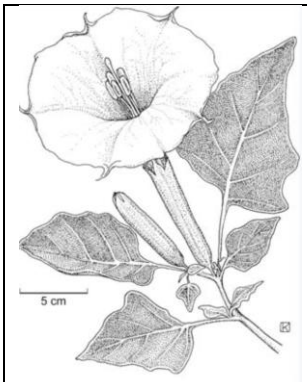
Plant Propagation Protocol for *Datura wrightii*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/2026/*DAWR2.pdf*

©Al Schneider. United States Colorado, NM, AZ, UT, Four Corners vicinity, within 150 miles of the corners [5]

TAXONOMY	
Plant Family	
Scientific Name	Solanaceae Juss [5]
Common Name	Nightshade [4] or Potato Family [5]
Species Scientific Name	
Scientific Name	*Datura wrightii* Regel [5]
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	*Datura inoxia* Mill. ssp. *quinquecuspida* (Torr.) Barcl. (DAINQ) *Datura metel* L. var. *quinquecuspida* Torr. (DAMEQ) [5] *Datura meteloides* auct.non DC. Ex. Dunal. [7]
Common Name(s)	Sacred thorn-apple [5], Sacred datura, Kótdop, Thorn Apple, Nightshade, Moon Lily, Loco Weed [8], and Angel Trumpet [4]
Species Code (as per USDA Plants database)	DAWR2 [5]
GENERAL INFORMATION	

Geographical range	 [5] Common across the Caribbean and North America in a multitude of States. [7]
Ecological distribution	Riparian, Shrubland, Woodland; floodplains, creosote brush, Joshua tree, sagebrush, and pinon-juniper communities. [4]
Climate and elevation range	Found in disturbed areas and sandy washes <7,200ft in elevation across the southwest. [9]
Local habitat and abundance	In the Pacific Northwest, they are found in disturbed, well-drained sandy or gravelly soil in open areas and roadsides. Commonly associated species include other Solanaceae, annual grasses, and pioneer forbs of disturbed sites. In the Southwest, associated with Agave palmeri, creosote bush (Larrea tridentata), and other desert scrub species. [1]
Plant strategy type / successional stage	Weedy/colonizer and early-seral stress-tolerator. Rapidly colonizes disturbed soils (roadsides, cleared ditches, floodplains). Exhibits plasticity between annual (northern populations) and short-lived perennial (southern populations) life-history strategies, consistent with a ruderal/colonizer strategy. [3] Generally low maintenance and can thrive in a wide range of habitats; works well in a perennial garden, bog, or pond area. They require sun and have a medium water requirement. [4]
Plant characteristics	Forb/herb, sub-shrub [5] The plant has grayish-green, toothed leaves; large, trumpet-shaped, night-blooming flowers; and prickly, round fruit capsules. **Growth Form:** Herbaceous **Height:** 3 to 6 ft. **Spread:** 3 ft. **Leaf Retention**: Deciduous **Lifespan:** Perennial [4]

 Datura wrightii © Regents of the University of California [12]	**Longevity:** Short-lived perennial in warm climates; annual in cooler northern portions of range. **Growth habit:** Spreading/mounding, 3–5 ft wide and 2–3 ft tall. **Key characteristics:** Large grayish-green leaves; enormous white trumpet-shaped flowers (up to 8–10 in. long) opening at dusk; spiny globose seed capsules; all parts highly toxic (tropane alkaloids: scopolamine, hyoscyamine, atropine). Dimorphic for leaf trichome morphology (glandular 'sticky' vs. nonglandular 'velvety' phenotypes controlled by a single dominant gene). [6] This herbaceous shrub's spectacular white flowers open at night and close during the day. [8] Flowers are pollinated in the evening by sphinx moths and in the early morning by honeybees and native bees. [10]
PROPAGATION DETAILS: FROM SEED	
Ecotype	Madrean Archipelago [9]
Propagation Goal	Plants [9]
Propagation Method	Seed [9]
Product Type	Container (plug) [9]
Stock Type	Container plug (small to medium pot) [9]
Time to Grow	Approximately 10 weeks [10 & 13]
Target Specifications	Plants with true leaves, well-rooted in a container, actively growing; hardened to outdoor temperature conditions before out planting. [4, 10, & 13]
Propagule Collection Instructions  Theresa Prendusi [11]	Collect spiny seed capsules ("thorn apples") when they turn brown and begin to crack open, typically late summer to fall (August–October, depending on location and elevation). Seeds are extracted from mature fruits. Place paper bags or fine-mesh nylon stockings over ripening capsules to catch seeds as pods split, or harvest pods just before splitting and allow them to finish drying in paper bags. **Precautions**: Do not use plastic bags (retain moisture, promote rot). [1] Wear work gloves to protect yourself from spiny fruits and toxic alkaloids. [9]
Propagule Processing/Propagule Characteristics	Crush capsules by stomping on them until they are in small pieces (<1cm^2). Sieve material through #6 sieve on top of #10 sieve. Shake thoroughly. The smallest material will fall to the bottom, larger debris will stay on top of #6 sieve, and seed material will remain on #10 sieve. #6 sieve is barely bigger than seeds, so look carefully and keep shaking until all seeds have fallen into #10 sieve. Orthodox storage is assumed. [9] Orthodox seeds are those that can be dried to moisture contents of 10% or less; in this condition, they can be successfully stored at subfreezing temperatures. True orthodox seeds can be stored for relatively long periods at subfreezing temperatures—if their moisture contents are reduced to about 5 to 10% (wet weight

	basis). The time limits for storage of true orthodox seeds under optimum conditions are not really known. [14] A single plant may produce up to 30,000 seeds. *Datura* seed can remain dormant in the soil for several decades. [13]
Pre-Planting Propagule Treatments	(1) Light scarification — lightly nick or sand the seed coat with fine-grit sandpaper to improve water uptake. (2) Warm water soak — soak scarified seeds in lukewarm water for 12–24 hours before sowing; change water if it becomes cloudy. (3) Optional cold stratification — 1–2 weeks in moist medium at refrigerator temperature (~4°C) may improve germination in some populations. Dormancy in Datura spp. is imposed by the endosperm restricting radicle growth; gibberellic acid treatment of de-coated seeds also improves germination in laboratory settings. [2]
Growing Area Preparation / Annual Practices for Perennial Crops	Very tolerant species, but the plant does well in clay, dry loam, sand, and well-drained soil types, with sun and medium water availability. [4]
Establishment Phase Details	Datura's seeds germinate in the warmer months when there is sufficient moisture. [13]
Length of Establishment Phase	Germination is often spread over several months, giving rise to plants of various ages. [13]
Active Growth Phase	Grow in 8-inch pots in a Sunshine Mix/vermiculite/sand mixture, water three times weekly, and fertilize every two weeks. [1]
Length of Active Growth Phase	Early growth is very rapid, and flowers can be produced by plants as young as 2 to 5 weeks old. [13]
Hardening Phase	Gradually reduce watering frequency to create mild moisture stress, which slows shoot growth and helps condition plants to withstand drier outplanting conditions. Reduce or stop nitrogen fertilization to further slow shoot growth. Move plants from the greenhouse to a shadehouse or open compound to expose them to ambient temperature and light conditions. [15]
Length of Hardening Phase	After reaching target size at the end of the rapid growth phase, plants need approximately 2 months to continue developing stem tissue and roots and to harden sufficiently to tolerate the stresses of harvesting, storage, shipping, and outplanting. [15]
Harvesting, Storage, and Shipping	The plant is toxic, so adequate labeling and proper work attire are necessary to ensure safety in shipping, handling, and all greenhouse work. [4]
Length of Storage	Minimize storage between the nursery and the outplanting. Outplant promptly after hardening; can hold containerized plants 1–4 weeks if watered and kept in full sun. [4, 10, & 13]

Guidelines for Outplanting / Performance on Typical Sites	Outplant in late spring to early summer when soil temperatures are warm, and frost risk has passed. Plant in full sun in well-drained sandy or gravelly soil. Drought-tolerant once established; provide supplemental water during the first growing season. [4, 10, & 13]
Other Comments	"Look. But don't touch." [8] Wear gloves at all times — all plant parts are highly toxic. [4] Believed to be a magical plant by Aztecs, Chumash, Zuni, Jivaro, Yaqui, Tohono, O'odham, and more. It is often taken/given as a sacrament by religious authorities, shamans, sadhus, yogis, thuggees, etc., to induce visions for aid in shape-shifting or as a doorway to the flaming world of the dead, a place you need to go to sometimes. [8]
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